Trip Report
2003 Annual Inspection of the
Grand Junction, Colorado, Office Facility
Defense Decontamination and Decommissioning Program Site

Summary

Long-Term Surveillance and Maintenance (LTSM) Program staff inspected the Grand Junction, Colorado, Office Facility on February 11, 2003. The inspection revealed that physical and institutional controls enacted at the facility remain effective in preventing exposure to contamination remaining on the property. A small hole in the floor in Building 20 should be plugged, loose warning signposts should be reset, the plaque for the decommissioned 300-foot borehole should be replaced, and the flush-mounted monitor wells should have permanent identification numbers. No cause for a follow-up inspection was identified.

1.0 Introduction

This report presents the results of the annual U.S. Department of Energy (DOE) inspection of the Grand Junction Office (GJO) Facility in Grand Junction, Colorado. R. K. Johnson (Chief Inspector) and M. J. Gardner (Assistant Inspector), both of the S.M. Stoller Corporation, the Technical Assistance Contractor at DOE-GJO, conducted the inspection on February 11, 2003, with J. P. Gilmore of DOE; P. Oliver of the Colorado Department of Public Health and Environment observed the inspection. The inspection was conducted in accordance with the *Long-Term Surveillance Plan* [LTSP] *for the U.S. Department of Energy Grand Junction, Colorado, Office Facility* (MAC-LGJO-1.1, DOE-GJO, June 2001) and procedures established by DOE-GJO to comply with the *Long-Term Surveillance and Maintenance Program Plan* (GJO-99-93-TAR, DOE-GJO, June 1999).

The GJO facility was contaminated during uranium milling and uranium oxide procurement activities conducted by the federal government between 1943 and 1974. DOE remediated the property between 1986 and 2001. Remediation consisted of decontaminating or demolishing contaminated buildings and removing contaminated soil. Contaminated materials were disposed of at the Grand Junction Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I disposal cell south of Grand Junction. DOE allowed some contaminated materials to be left in place until they can be remediated efficiently.

DOE transferred approximately 8 acres of the GJO facility to the U.S. Department of the Army (occupied by an engineering unit of U.S. Army Reserve) and the remainder of the facility to nonfederal ownership (Riverview Technology Corporation) in 2001, in conjunction with a state-approved Request for Deferred Remediation. DOE leases several buildings from the Riverview Technology Corporation to conduct its ongoing operations. DOE remains responsible for ensuring that contamination left on the former DOE property is controlled to prevent hazardous exposure to the public and the environment.

Contamination remains in four occurrences:

- In a buried concrete slab and underlying soil beneath the south portion of Building 12.
- In soil and rubble beneath the southwest corner of Building 20.
- In ground water and surface water within the site perimeter.
- As radium foil sealed below ground in a decommissioned calibration borehole.

Contamination beneath Buildings 12 and 20 will be remediated when DOE vacates those buildings and they are demolished. The ground water and surface water is expected to meet water quality requirements within 100 years by the process of natural flushing of the alluvial aquifer. DOE will provide stewardship oversight of the radium foil well in perpetuity.

Controls to maintain protectiveness from hazards created by the contaminated materials include warning signs, physical access barriers, deed restrictions, periodic inspections, and records maintenance. The purposes of annual inspections are to confirm the integrity of visible features at the site, to identify changes in conditions that may affect site protectiveness, and to determine the need, if any, for maintenance, additional inspections, or monitoring.

2.0 Inspection Results

The annual inspection addresses only those portions of the GJO facility that must be monitored and maintained to ensure continued protection of human health and the environment. Those portions are related to contaminated media that remain at the GJO facility. Features and photograph locations (PLs) mentioned in this report are shown on the attached figure.

2.1 Specific Site Surveillance Features

Monuments—Two monuments exist at the GJO facility. A 1/16 section corner monument is across the road from the facility. This monument was the origin for the site survey coordinate system during remediation. A U.S. Coast and Geodetic Survey monument is near the north gate. This monument establishes elevation control for the facility. Both monuments are in excellent condition.

Monitor Wells—DOE owns eight monitor wells on the property to monitor the progress of natural flushing of contaminants from the alluvial aquifer. The wells are sampled annually. Inspectors found the visible portions of all wells in good condition, and all wells were secure.

Three of the flush-mounted wells (11–1S, 14–13NA, and GJ01–01) do not have visible identification numbers (PL–1 and PL–2). One flush-mounted well (GJ01–02) has its identification marked in red paint on the concrete collar, and two flush-mounted wells (10–19N and GJ84–4) have their identification numbers marked on metal signs next to the wells. It is recommended that all the flush-mounted wells have permanent visible identification numbers indicated on the caps or covers.

Warning Signs—Thirteen warning signs installed on galvanized steel posts are positioned around the surface water areas so the warning will be visible to a person approaching from any direction of reasonable access (PL–3). Dense vegetation or fences block access to portions of the surface water occurrences. All signs are in excellent condition. The signposts for warning signs S9 and S10 are loose and should be reset in concrete.

Radium Foil Borehole—DOE installed a 300-foot-deep cased borehole in the 1980s to calibrate depth measurement systems on borehole geophysical logging trucks. Two strips of radium-226 foil were placed around the casing at depths of 81 feet (29 picocuries per gram) and 181 feet (3 picocuries per gram). During calibration, the instruments in the trucks would detect the gamma signal from the radium.

The borehole was decommissioned in place in 2000. DOE perforated the casing above and below each strip of foil and pressure-grouted the annulus with Portland cement to seal the foil in place. The borehole was filled with grout, and a metal plaque was mounted in concrete at ground level over the well. Borehole information printed on the metal plaque is fading and difficult to read (PL–4). It is recommended that the original plaque be replaced with a new metal plaque with the borehole information die-stamped or engraved into the metal.

2.2 Transects

To ensure a thorough and efficient inspection, the site was divided into two areas referred to as transects: (1) the area within the former DOE property boundary that is addressed in the LTSP; and (2) the outlying area.

Within each transect, inspectors examined specific site surveillance features, such as survey markers, warning signs, and monitor wells. Inspectors examined each transect for evidence of erosion, excavation, vandalism, or other phenomenon that might indicate a loss of institutional control or diminished protectiveness.

Interior Portions of the Site—This transect includes the portions of Buildings 12 and 20 where contamination remains beneath the buildings, the surface water areas, and other site surveillance features within the former DOE property boundary.

Inspectors entered Buildings 12 and 20 to inspect the floors above the contamination. A small hole plugged with paper was noticed in the southeast corner of Room 33B in Building 20 (PL–5). It may be an old test hole cored through the floor during radiological assessment of the building and should be permanently plugged. There was no evidence of recent floor penetrations in the affected areas. Likewise, the exterior areas opposite the contaminated media did not appear to have been disturbed. The current site owner controls maintenance activities in the exterior areas near the contaminated soil and GJO personnel constantly observe these exterior areas during normal working activities.

The North Pond, South Pond, and wetland areas are surrounded by a fence, which limits casual intrusion. There was no evidence of fishing, trespass, vandalism, or use of the water. An old construction warning sign was observed at the north end of the South Pond and subsequently was removed by the inspectors.

Most of the site surveillance features are in areas not easily accessible by the public due to fencing. Inspectors observed no signs of activity, development, or land use change on the site that might degrade protectiveness.

The DOE in-ground calibration facility, which is in an area that is accessible by the public but not a required surveillance feature for this site, was checked as a best management practice. A lock for one model was found open and was resecured by the inspectors. A large pile of weeds and clipped branches from shrubs and trees was adjacent to, and partially on, the southernmost calibration models. The site owner subsequently removed this debris pile.

Tamarisk and Russian olive, both undesirable plant species, are establishing around the perimeter of South Pond, in the wetlands area, and along the dike road. Mature stands of tamarisk are present around North Pond and along the bank of the Gunnison River. These plants are not designated for control under the LTSP.

Outlying Area—Inspectors observed no signs of activity, development, or land use change that might degrade protectiveness.

3.0 Recommendations

1. None of the flush-mounted monitor wells have their identification numbers permanently marked on their caps or covers.

   Recommendation: Die-stamp or engrave identification numbers on all flush-mounted monitor wells.

2. The signposts for warning signs S9 and S10 are loose.

   Recommendation: The signposts should be reset with concrete.

3. The printed information on the plaque of the decommissioned 300-foot borehole is fading.

   Recommendation: Replace the plaque with a stamped or engraved metal plaque.

4. A small hole is in the floor in the southeast corner of Room 33B in Building 20.

   Recommendation: Plug the hole with grout or other permanent material.

4.0 Photographs

Photograph Location Number	Azimuth	Description
PL–1	330	Cap of monitor well GJ01–01.
PL–2	250	Manhole cover on monitor well 11–1S.
PL–3	330	Warning sign S1 at south end of South Pond.
PL–4	270	Plaque on decommissioned 300-foot deep calibration borehole.
PL–5	165	Hole in floor in the southeast corner of Room 33B, Building 20.

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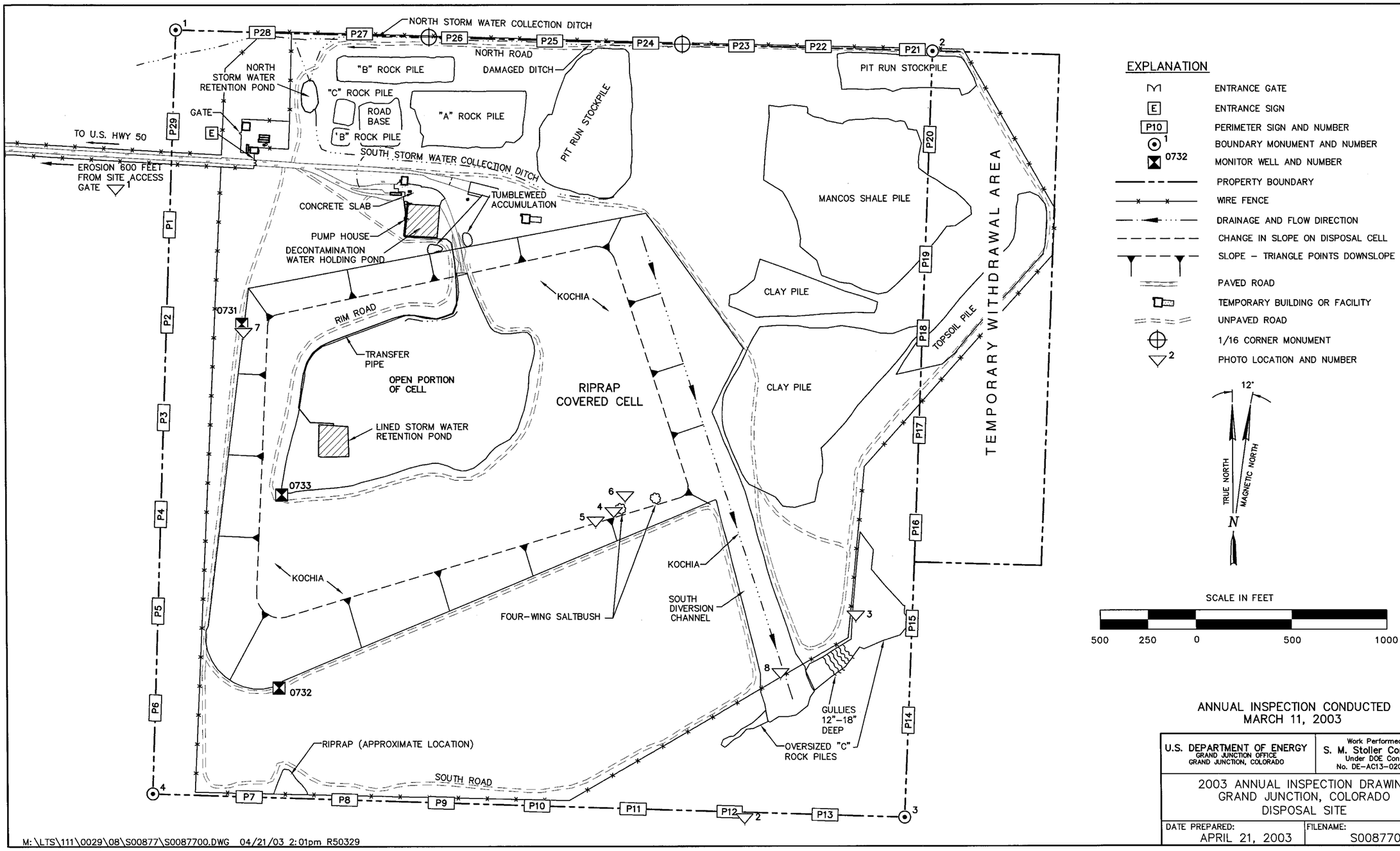
GJO 02/2003. PL–1. Cap of monitor well GJ01–01.

GJO 02/2003. PL–2. Manhole cover on monitor well 11–1S.

GJO 02/2003. PL–3. Warning sign S1 at south end of South Pond.

GJO 02/2003. PL–4. Plaque on decommissioned 300-foot deep calibration borehole.


GJO 02/2003. PL–5. Hole in floor in the southeast corner of Room 33B, Building 20.



EXPLANATION

- ENTRANCE GATE
- E — ENTRANCE SIGN
- P10 — PERIMETER SIGN AND NUMBER
- 1 — BOUNDARY MONUMENT AND NUMBER
- 0732 — MONITOR WELL AND NUMBER
- PROPERTY BOUNDARY
- WIRE FENCE
- DRAINAGE AND FLOW DIRECTION
- CHANGE IN SLOPE ON DISPOSAL CELL
- SLOPE – TRIANGLE POINTS DOWNSLOPE
- PAVED ROAD
- TEMPORARY BUILDING OR FACILITY
- UNPAVED ROAD
- 1/16 CORNER MONUMENT
- 2 — PHOTO LOCATION AND NUMBER

12°

TRUE NORTH

MAGNETIC NORTH

N

SCALE IN FEET

500 250 0 500 1000

ANNUAL INSPECTION CONDUCTED
MARCH 11, 2003

U.S. DEPARTMENT OF ENERGY GRAND JUNCTION OFFICE GRAND JUNCTION, COLORADO	Work Performed by S. M. Stoller Corporation Under DOE Contract No. DE-AC13-02GJ79491
2003 ANNUAL INSPECTION DRAWING GRAND JUNCTION, COLORADO DISPOSAL SITE	
DATE PREPARED: APRIL 21, 2003	FILENAME: S0087700

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